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July 25, 1996

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
Washington, DC 20554

RE: CC Docket 96-98
Ex Parte Presentation

Dear Mr. Caton:

Pursuant to a request from the Commission's staff, BellSouth is submitting the attached response to the ex parte presentation dated July 19, 1996, and the associated statement prepared by Professors R. Glenn Hubbard and William H. Lehr. The enclosed comments have been prepared by Professor Jerry Hausman of MIT.

Two copies of this Notice are being submitted to the Secretary of the FCC, in accordance with the Commission's rules.

Sincerely,

Robert T. Blau

Robert T. Blau
Vice President
Executive and Federal Regulatory Affairs

Attachment

cc: Joe Farrell
Richard Metzger
Gregory Rosston

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ECONOMICS CAMBRIDGE, MASSACHUSETTS 02139

25 July 1996

Dr. Joseph Farrell
Chief Economist
Federal Communications Commission
Office of Plans & Policy
1919 M Street, N.W.
Washington, D.C. 20554

Dear Joe,

I enclose some brief comments on AT&T's latest submission by Professors Hubbard and Lehr, as you indicated I should do in our meeting on July 23. I hope you find these comments useful.

Yours,

Jerry Hausman
MacDonald Professor of Economics

JAH/lag
Enclosure

Response to Profs. Hubbard and Lehr

Jerry A. Hausman, MIT

July 25, 1996

As I only yesterday received AT&T's belated response to my May 30th submission on why TLSRIC is an incorrect measure of ILEC costs under the Telecommunications Act of 1996, I will be brief.

I. Summary

The submission by AT&T's new experts, Profs. Hubbard and Lehr, recognizes that the TSLRIC recommendation as put forward by their previous experts, Profs. Baumol, Ordover, and Willig (and the DOJ) is incorrect. Profs. Hubbard and Lehr admit this fact of economic theory, but claim the effects that I identified, which TSLRIC omits, are smaller than I estimate. The magnitude of the effect for each type of investment is, however, an empirical question which needs to be resolved before an impartial fact finder. But Hubbard and Lehr recognize, as AT&T must, that TSLRIC as a theoretical concept is incorrect and that the Hatfield model omits all three of the factors that I discussed in my previous submissions and that Hubbard and Lehr admit should be included.

I. Specific Points

1. Hubbard and Lehr (HL) state: "The value of this option [of waiting to invest] should be included in the TSLRIC." (p. 7) TSLRIC as explained by AT&T's previous experts Prof. Baumol, Ordover, and Willig (BOW) did not include the option value which arises from sunk and irreversible investments, and in Prof. Baumol's many writings on TSLRIC and his numerous affidavits and submitted testimony on TSLRIC, he has never included it. HL want to redefine TSLRIC to include the option effect, but in no regulatory proceeding has the option value been measured or included.

2. The option value, which HL admit should be present, is nowhere in

the Hatfield model which claims to calculate TSLRIC. To quote HL: "Thus, Prof, Hausman's theoretical criticism of TSLRIC only applies to incorrectly estimated TSLRICs." (p. 8) HL thus admit that the Hatfield model is incorrect; I could not agree more. Of course, Hatfield's modal is wrong for many other reasons which I have discussed previous along with Dr. Tardiff.

3. I stated previously that correct economic depreciation is not included in TSLRIC. Discount rates must be adjusted for economic depreciation as I demonstrated in the derivation of equation (1) of my reply affidavit. Again HL admit that economic depreciation must be included (p. 8). TSLRIC calculations omit this effect. Again, because the Hatfield model has no adjustment to the discount rate for economic depreciation, HL have further demonstrated that the Hatfield model is incorrect.

Also, AT&T's other experts, BOW, do not discuss the need to include economic depreciation. Indeed, AT&T stated in their comments that the ILECs should not be allowed to take account of price changes in investment goods. Now, AT&T's new experts admit that economic depreciation needs to be included. At most, HL admit, "It is possible to re-estimate the Hatfield model using alternative assumptions regarding economic lives and discount rates." (p. 9) HL state: "...the TSLRIC estimates would still reflect a partial accounting for economic depreciation." (p. 9) The Telecommunications Act of 1996 and Congress state that the ILECs will get all their costs (and may receive a reasonable profit), not just a "partial accounting" of these costs.

4. HL do not disagree with the data in my switch example (p. 9). They shouldn't because the data are from Lucent (formerly AT&T). Instead, they say loops are different from switches. I agree. Thus, the markup factor I discuss in my affidavit will differ for different elements. For maximum accuracy, separate calculations should be made for each element. But switches still exist and are important, as is each different element which must be separately considered in terms of economic depreciation and the markup.

5. HL use a well known equation (1) which I referred to in my response to the DOJ (July 11, 1996 p. 4, fn. 7). HL state that one term of the equation is the "expected exponential rate of change in the relative price of the capital good". Note that this term is nowhere in the Hatfield model. Nor do HL claim that it is captured in the Hatfield model. Thus, again AT&T's new experts admit that the Hatfield model is wrong.

III. Estimation of the Markup Term Due to Sunk and Irreversible Investment

6. HL agree with me that the neoclassical model (on which TSLRIC calculation are based to some extent) has "limiting features" because it assumes that "investment projects are reversible". (HL, p. 11) However, HL incorrectly characterize my example as arising in a monopoly context. (p. 17) A similar markup factor arises in a competitive market as the research of Prof. Leahy demonstrates (Quarterly Journal of Economics, 1993), and as Dixit and Pindyck explain in their textbook (Ch. 8). I discuss this competitive situation at greater length in my July 11 submission, "Comments on DOJ's TSLRIC Pricing Analysis", pp. 4-5. I never assumed a monopoly situation in my calculations. And HL admit: "It is still the case in this [competitive] example that the threshold price for entry is above the usual Marshallian level." (p. 18, fn. 22) Thus, the markup factor which arises because of sunk and irreversible investment still must be included, even according to AT&T's new experts.

7. HL are also incorrect when they say I used "parameter values given by Dixit and Pindyck." In the quote they take from my affidavit I state: "Using parameters for ILECs and taking account the decrease in capital prices due to technological progress..." (p. 6) Thus, I use estimated parameters for ILECs and combine both of the effects of economic depreciation and the irreversible investment to find a value of m to be about 3.2-3.4. I did not depend on the Dixit and Pindyck parameters.

8. HL claim that I stated that "all local-exchange investments as irreversible". (p. 15) I never made this statement. They also state that my examples assumes no operating costs. (p. 15) On p. 4 of my affidavit (fn. 4), I state that "Variable costs can be included by reinterpreting p to be price minus variable costs which will lead to the same solution." HL misunderstood the plain language of my affidavit.

9. HL attempt to lower the estimated markup factor from 2 to 1.3. They have misinterpreted the use of the markup factor which only applies to the investment cost as my statement above from my fn. 4 makes clear. But suppose, HL were correct. The 1.3 factor (or any factor at all) is nowhere in TSLRIC as it has been previously estimated, it is nowhere in the Hatfield model, and it is nowhere in Prof. Baumol's previous writings and testimony on TSLRIC. The size of the markup factor will vary by element and type of investment. A fact finder presented with the various estimates will need to decide the best estimate of the markup.

10. HL attempt to state that perhaps most telecommunications investments by ILECs are not irreversible. Perhaps they have another use for feeder and distribution fiber as well as loops once they have been installed? But in fact, my markup factor does not assume that "all of the costs" of ILEC investment are sunk. (p. 19) My equation (1) demonstrates how to take account of non-sunk investments. But the HL examples are somewhat far fetched. They talk about a sale of a rural exchange; but a rural exchange hardly characterizes the Bush-Pine exchange of PacTel in downtown San Francisco. However, I would agree that the final question is an empirical matter.

11. HL make a further mistake that I feel bound to point out. HL state that the overall LEC cost of capital "will subsume the effects described by Hausman." (p. 22) This statement is clearly wrong because the ILEC overall

cost of capital is determined by the entire firm. However, all modern finance theory recognizes that the specific investment project and its associated risk must be separately valued (e.g. R. Brealey and S. Myers, Principles of Corporate Finance, 1991) Some assets held by ILECs may have significantly less risk than other new investment projects. Thus, the markup factor to take account of irreversibility needs to be calculated for each element (or service) whose price needs to be calculated. HL lose cite of this basic fact. This reasoning is also used to explain why competitive firms, e.g. Hewlett Packard, use hurdle rates for individual projects which are far higher than the firm's cost of capital. As I stated in my affidavit (p. 8, fn. 10), Deputy Treasury Secretary L. Summers (1987) in a survey of firms found mean and median hurdle rates to exceed the cost of capital by a factor of between 2 and 10. HL confuse risks of individual projects and a company's overall cost of capital.

12. In conclusion, AT&T has used new experts who admit that economic depreciation and the markup factor due to sunk costs both need to be included in forward looking costs. They also admit that TSLRIC as calculated and the Hatfield model omit these factors. Thus, I repeat my recommendation to the Commission. TSLRIC cannot be used under the Telecommunications Act of 1996 because it omits three factors: (1) joint and common costs (2) economic depreciations (3) the markup due to the risk of sunk and irreversible investments. HL may disagree about the empirical magnitude of these facts, but they do not disagree about the requirement to include them in forward looking cost calculations.